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10/018,942	04/29/2002	Oliver Cruder	119.4-US-WO	8670
22462	7590	07/14/2004	EXAMINER	
GATES & COOPER LLP HOWARD HUGHES CENTER 6701 CENTER DRIVE WEST, SUITE 1050 LOS ANGELES, CA 90045			PEREZ, JULIO R	
			ART UNIT	PAPER NUMBER
			2681	

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/018,942

Applicant(s)

CRUDER ET AL

Examiner

Julio R Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

### A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-5, 7, 12, 18, 19, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by applicant's submission of prior art Leung et al. (5864763).

Regarding claim 1, Leung et al. disclose a stand-alone communication interface comprising: a convertor for receiving audio signals including in-band DTMF signals, from a telephony device and converting said received signals into digital data (col. 2, lines 60-67; col. 3, lines 1-3 and 34-44; Fig. 1-2, the interface detects analog signals and converts them into digital information); and a point to point wireless transmitter for receiving said digital data and transmitting said digital data at a radio frequency via an external antenna (col. 3, lines 34-44; col. 4, lines 26-33; Fig. 1-2, the interface is able to receive the digital information and transmitting RF signals via antenna system (66)).

Regarding claim 4, Leung et al. disclose an interface, wherein said convertor comprises a sampler for performing waveform coding (col. 4, lines 6-10, conversion from analog to digital is performed).

Regarding claim 5, Leung et al. disclose an interface, wherein said waveform coding convertor comprises a pulse code modulation convertor (col. 5, lines 11-16, data is formatted to digital samples).

Regarding claim 7, Leung et al. disclose an interface; further comprising a spread spectrum encoder for encoding said digital data (col. 4, lines 26-41, it is inherent as evidenced by the fact that one of ordinary skill in the art would have recognized that the in CDMA systems, cells sites contain modulator-demodulator elements or spread spectrum modems, which consist of a digital spread spectrum transmit modulator and at least one digital spread spectrum data receiver.

Regarding claim 12, Leung et al. disclose an interface, wherein said external telephone device is a pay telephone (col. 2, lines 36-47, the system provides interface means to analog telephone systems).

Regarding claim 18, Leung et al. disclose a stand-alone communication interface comprising: converter means for receiving audio signals including in-band DTMF signals, from a telephony device and converting said received signals into digital data (col. 2, lines 60-67; col. 3, lines 1-3 and 34-44; Fig. 1-2, the interface detects analog signals and converts them into digital information); and point to point wireless transmitter means for receiving said digital data and transmitting said digital data at a radio frequency via an external antenna (col. 3, lines 34-44; col. 4, lines 26-33; Fig. 1-2, the interface is able to receive the digital information and transmitting RF signals via antenna system (66)).

Regarding claim 19, Leung et al. disclose a method of operating a stand-alone communication interface comprising the steps of: receiving audio signals including in-band DTMF signals, from a telephony device (col. 2, lines 60-67; col. 3, lines 1-3 and 34-44; Fig. 1-2, the interface detects analog signals and converts them into digital

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information); converting said received signals into digital data; and transmitting said digital data at a radio frequency, using point to point wireless via an external antenna (col. 3, lines 34-44; col. 4, lines 26-33; Fig. 1-2, the interface is able to receive the digital information and transmitting RF signals via antenna system (66)).

Regarding claim 21, Leung et al. disclose a method of operating a stand-alone communication interface comprising the steps of: receiving audio signals including in-band DTMF signals, from a public switched telephone network (col. 2, lines 60-67; col. 3, lines 1-3 and 34-44; Fig. 1-2, the interface detects landline analog signals and converts them into digital information); converting said received signals into digital data (col. 2, lines 60-67; col. 3, lines 1-3 and 34-44; Fig. 1-2, the interface detects analog signals and converts them into digital information); and transmitting said digital data at a radio frequency, using point to point wireless via an external antenna (col. 3, lines 34-44; col. 4, lines 26-33; Fig. 1-2, the interface is able to receive the digital information and transmitting RF signals via an antenna system).

3. Claims 20, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Guridi et al. (5978676).

Regarding claim 20, Guridi et al. disclose a method of operating a stand-alone communication interface comprising the steps of: receiving digital data at a radio frequency, using point to point wireless via an external antenna (col. 8, lines 47-64; col. 10, lines 8-21, the system comprises means to receiving digital data at the MSC via the RF); converting said digital data into audio signals including in-band DTMF signals (col. 10, lines 8-21, the MSC is capable of recreating the digital data in DTMF); and passing

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said audio signals including in-band DTMF signals to a telephony device (col. 10, lines 8-21, the MSC is capable of recreating the digital data in DTMF; the signal is delivered to a remote station via POTS).

Regarding claim 22, Guridi et al. disclose a method of operating a stand-alone communication interface comprising the steps of: receiving digital data at a radio frequency, using point to point wireless via an external antenna (col. 8, lines 47-64; col. 10, lines 8-21, the system comprises means to receiving digital data at the MSC via the RF); converting said digital data into audio signals including in-band DTMF signals (col. 10, lines 8-21, the MSC is capable of recreating the digital data in DTMF); and passing said audio signals including in-band DTMF signals to a public switched telephone network (col. 10, lines 8-21, the MSC is capable of recreating the digital data in DTMF; the signal is delivered to a remote station via POTS).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2,3,6,13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (5864763) in view of West Jr. et al. (4658096).

Regarding claim 2, Leung et al. teach all the limitations in claim 1.

Leung et al. fail to specifically disclose a telephone line jack, electrically connected to said convertor, allowing for removable connection of said telephony device.

However, the preceding limitation is well known in the art of communications.

West Jr. et al. teach a telephone set and a radio transceiver coupled by an interface system; that is, P4/J4 pertaining to jack modular connections as shown on Fig. 2, (col. 4, lines 62-68; col. 5, lines 1-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system as taught by West Jr. et al. with jack modular because it would render the interfaces with easy connectivity.

Regarding claim 3, Leung et al. teach the interface, further comprising: an antenna jack, electrically connected to said point to point wireless transmitter, allowing for removable connection of said antenna (col. 4, lines 3-4 and 31-33; Fig. 2, ref. 66).

Regarding claim 6, Leung et al. teach the limitations in claims 1 and 5.

Leung et al. fail to specifically teach a pulse code modulation convertor that comprises an adaptive differential pulse code modulation convertor (ADPCM).

However, as admitted by applicant such a modulation scheme is well known (See page 11, lines 12-29; page 12, lines 22-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system as taught by Leung et al. with ADPCM because it provide the system with a sophisticated technique for reducing voice data storage, hence improving voice quality, and because this technique reduces the time delays to process a signal.

Regarding claim 13, Leung et al. teach the limitations in claim 1.

Leung et al. do not specifically disclose an interface, further comprising a source of direct current (DC) power.

However, the preceding limitation is well known in the art of telecommunications.

West Jr. et al. teach the radio that is operated by 12-volt DC current (col. 2, lines 39-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system as taught by Leung et al. with a DC voltage power source or DC batteries because it would provide the system with capability of AC to DC conversion.

Regarding claim 14, West Jr. et al. teach an interface, wherein said converter comprises a tip/ring reversal-signaling interface (col. 2, lines 45-68).



Regarding claim 15, West Jr. et al. teach an interface, wherein said converter comprises a means for encoding out-of-band signals (col. 2, lines 45-62, includes tone, ringing, and on- or off-hook status).

Regarding claim 16, Leung et al. teach an interface, wherein said transmitter comprises a transmitter for transmitting in time domain duplex (TDD), enabling two way communication in a single frequency channel (col. 3, lines 21-33; col. 4, lines 27-41; col. 5, lines 45-51, Leung strongly recommends the use of other digital technologies besides CDMA; Leung further teaches bi-directional communication. In addition, technologies, for instance, TDMA and GSM are characterized by the use of both frequency and time separation).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (5864763) in view of Gilhousen et al. (5103459).

Regarding claim 8, Leung et al. teach all the limitations in claim 1.

Leung et al. fail to specifically disclose wherein the spread spectrum encoder comprises a direct sequence spread spectrum transmitter.

However, the preceding limitation is well known in the art of telecommunications.

Gilhousen et al. teach a spread spectrum cellular system that involves direct sequence pseudonoise SS carrier (col. 8, lines 32-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system as taught by Leung et al. with direct sequence spread spectrum techniques because the system would be able to

carry higher data rates, reach longer ranges, be insensitive to interference and to multi-path effects, and provide maximum security.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (5864763) in view of Stilp et al. (6334059).

Regarding claim 9, Leung et al. teach the limitations in claim 1.

Leung et al. fail to specifically disclose the transmitter comprising a Gaussian minimum shift keying (GMSK) modulator.

However, the preceding limitation is well known in the art of telecommunications.

Stilp et al. teach transmission in time bursts in timeslots, which use the known modulation scheme GMSK.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system as taught by Leung et al. with GMSK modulation because it would make the system robust to channel interference, to minimize spectral leakage, and to acquire more power efficiency.

8. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (5864763) in view of Stilp et al. (6334059) further in view of Nysen et al. (5164985).

Regarding claim 10, Leung et al. and Stilp et al. teach the limitations in claim 9.

Leung et al. and Stilp et al. fail to specifically disclose a modulator for transmitting in an unlicensed frequency band.

However, the preceding limitation is well known in the art of telecommunications.

Nysen et al. teach a controller that transmits frequency in the ISM band, corresponding to non-licensed frequency (col. 10, lines 20-25 and 59-62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system as taught by Leung et al. and Stilp et al. with unlicensed frequency modulation because it would provide the system with power transmission within low power level limits as required for an unlicensed frequency band.

Regarding claim 11, Nysen et al. teach wherein said modulator a modulator for transmitting in an Instrumentation, Scientific, and Medical (ISM) frequency band (col. 10, lines 20-25 and 59-62).

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (5864763) in view of Paneth et al. (6014374).

Regarding claim 17, Leung et al. teach the limitations in claim 1.

Leung et al. do not specifically disclose 14.4 kbps digital modem transmitter for transmitting payphone operational data.

However, the preceding limitation is well known in the art of telecommunications.

Paneth et al. teach modems with data rates above 9600 Kbps (col. 13, lines 14-31; col. 14, lines 9-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system as taught by Leung et al. with transmission modem of moderate speeds in order to reach data rates not greater than 14.4 Kbps so that bauds of 1200 can be accomplished.

***Conclusion***


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the art with respect to interfaces for allowing connection between telephone, fax devices, and other similar devices to the PSTN wirelessly and digital-analog, analog-digital conversion.

US Pat. No. 5586275 to Ehlig et al.	Data processing devices
US Pat. No. 4576093 to Snyder	Remote radio blasting
US Pat. No. 6400957 to Rodrigues et al.	Phone-line interface

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio R Perez whose telephone number is (703) 305-8637. The examiner can normally be reached on Monday - Friday, 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Erika Gary can be reached on (703) 308-0123. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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ERIKA GARY  
PATENT EXAMINER